



Information Brochure 2023



होमी भाभा राष्ट्रीय संस्थान

HOMI BHABHA NATIONAL INSTITUTE

परमाणु ऊर्जा विभाग की सहायता प्राप्त संस्था
और यूजीसी अधिनियम 1956 की धारा 3 के तहत विश्वविद्यालय माना जाता है
(A Deemed to be University u/s 3 of UGC Act 1956 and a Grant-in-Aid
Institute of the Department of Atomic Energy, Govt. of India)

Location of HBNI Central Office, Constituent Institutions & Off Campus Centre



HRI, Allahabad



IPR, Gandhinagar



RRCAT, Indore



BARC, Mumbai



TMC, Mumbai



HBNI Central Office



VECC, Kolkata



SINP, Kolkata



IoP, Bhubaneswar



NISER Bhubaneswar



IMSc, Chennai



IGCAR, Kalpakkam



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2023**



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ABOUT HOMI BHABHA NATIONAL INSTITUTE (HBNI)

HBNI was established in 2005 as a Deemed to be University under section 3 of the University Grants Commission (UGC) act 1956 and was recognized as Grant-in-aid Institution of Department of Atomic Energy in 2014.

HBNI brings together ten premier DAE institutions established as Research and Development Centres and grand-in-aid autonomous centres as Constituent Institutions, under a single research driven framework. NISER, Bhubaneswar, set up in 2006, is an Off Campus Centre (OCC) of HBNI. The 10 constituent institutions (CIs) and one Off-Campus Centre (OCC) of HBNI are:

1. Bhabha Atomic Research Centre (BARC), Mumbai (www.barc.gov.in)
2. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam (www.igcar.gov.in)
3. Raja Ramanna Centre for Advanced Technology (RRCAT), Indore (www.rrcat.gov.in)
4. Variable Energy Cyclotron Centre (VECC), Kolkata (www.vecc.gov.in)
5. Saha Institute of Nuclear Physics (SINP), Kolkata (www.saha.ac.in)
6. Institute for Plasma Research (IPR), Gandhinagar (www.ipr.res.in)
7. Institute of Physics (IoP), Bhubaneswar (www.iopb.res.in)
8. Harish-Chandra Research Institute (HRI), Allahabad (www.hri.res.in)
9. Tata Memorial Centre (TMC), Mumbai (www.tmc.gov.in) and
10. Institute of Mathematical Sciences (IMSc), Chennai (www.imsc.res.in)
11. National Institute of Science Education and Research (NISER), Bhubaneswar (OCC) (www.niser.ac.in)

The role of HBNI is to nurture in-depth capabilities in Nuclear Science and Engineering and to serve as a catalyst to accelerate the pace of basic research and facilitate its translation into technology development and applications through its various academic programs.

MISSION OF HBNI

The Mission of HBNI is to encourage the pursuit of excellence in Sciences (including Engineering sciences) and Mathematics in a manner that has major significance for the progress of indigenous nuclear technological capability.

VISION OF HBNI

The Vision of HBNI is articulated below:

- To provide an academic framework for integrating basic research with technology development.
- To encourage inter-disciplinary research.
- To nurture an environment for attracting high-quality manpower in the sciences including engineering sciences to take up a career in Nuclear Science and Technology and related areas.

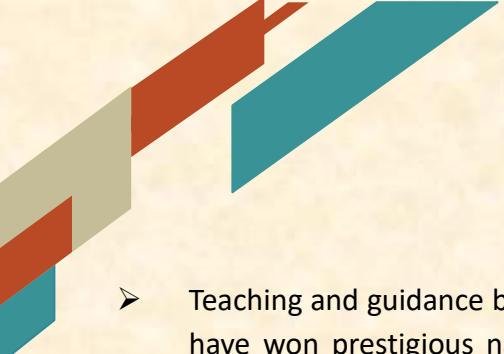
Guided by the vision, mission and objectives, the value proposition of the institute is to:

- Always adhere to the highest ethical standards and put good of students first
- Value excellence in research and foster innovation and creativity
- Recognize importance of Science for the development of the society

HBNI: A UNIQUE UNIVERSITY

HBNI Is a unique research institute in many ways as listed below:

- Availability of a wide range of academic programmes in varied disciplines aiming at broadening scientific knowledge as well as skill development.
- Only institute in the country offering research opportunities in the field of nuclear science and engineering, giving a unique opportunity to students to participate and contribute in nuclear energy program of the nation.
- Offers opportunity to do innovative research in unique areas that cannot be attempted in most other institutes in the country (e.g., molten salt chemistry, applications of radiation technologies in the fields of agriculture, medicine, industry, high-temperature thermodynamics, irradiated material properties, etc.) using the world-class infrastructure available at its CIs.
- Feasibility to do research in frontier areas of all branches of Science and Engineering as well as Interdisciplinary research with national/international collaboration.
- HBNI conducts unique specialty and super-specialty courses in Oncology and related fields at Master's and Doctoral level through its CI, TMC, giving students an opportunity to acquire knowledge and skills to provide quality cancer care to society.

- 
- Teaching and guidance by nationally and internationally renowned faculty members who have won prestigious national awards like S. S. Bhatnagar award, Civilian awards and honors like fellowships of national/international academies.
 - 1. Students have access to wide range of facilities starting from table top instruments to mega facilities such as research reactors, accelerators, tokamaks and excellent support facilities such as well-equipped libraries, high performance computational facilities and modern laboratories at par with global standards.
 - All Ph.D. students get DAE fellowships on par with UGC guidelines or higher
 - No tuition fee is charged for most of the academic programmes run by HBNI
 - Foreign travel assistance is provided to doctoral students for participation in International Conferences, Symposia and Scientific meetings.

MANAGEMENT OF HBNI

The Council of Management is the principal body for the management of the Institute. All academic issues are handled by Academic Council which functions on the advice of the Board of Studies constituted for guiding various academic programmes in different disciplines as follows:

- **Chemical Sciences**
- **Engineering Sciences**
- **Medical and Health Sciences**
- **Life Sciences**
- **Mathematical Sciences**
- **Physical Sciences**
- **Applied System Analysis**

A separate Board of Studies looks after the Integrated Masters Programme at NISER.

To manage the affairs of the Institute at the level of Constituent Institutions, each CI has one or more Deans-Academic and a university cell. CIs have also established a robust framework of admission, evaluation of performance and monitoring the progress of research by the students.

ACADEMIC PROGRAMMES OF HBNI: PATHWAYS TO PROFESSIONAL CAREERS

HBNI offers a range of academic programmes in various disciplines of science at its constituent institutes (CI)/off campus Centres (OCC) and the details are given below:

- **Ph.D.** degrees in varied disciplines (Applied System Analysis, Chemical Sciences, Computer Science, Computational Biology, Earth & planetary Science, Engineering Sciences, Humanities & Social Sciences, Life Sciences, Mathematical Sciences, Medical & Health Sciences, Physical Sciences and Theoretical Computer Science)
- **Integrated Ph.D.** in Applied System Analysis, Chemical Sciences, Computational Biology, Engineering Sciences, Life Sciences, Mathematical Sciences and Theoretical Computer Science
- **M.Sc.** (Engineering Sciences), **M.Sc.** (Physics)
- **M.Sc.** (Nursing) and **M.Sc.** (Clinical Research)
- **M.Sc.** (Public Health and Epidemiology) and **M.Sc.** (Occupational Therapy in Oncology)
- **M.Sc.** (Nuclear Medicine and Molecular Imaging Technology) and **M.Sc.** (Hospital Radiopharmacy)
- **Integrated M.Sc.** (five-year duration in Chemical Sciences, Life Sciences, Mathematical Sciences and Physical Sciences)
- **Post-Graduate Medical Degree, M.D.** in various broad domains of oncology
- **Super Specialty Medical Degree, D.M.** and **M.Ch** in specialised domains of oncology
- **Post graduate (PG) Diploma** in Nuclear Science and Engineering (**DipNSE**)
- **PG Diploma** in Radiological Physics (**DipRP**)

More details about the courses and admission requirements are available on HBNI website:

<http://www.hbni.ac.in/>.

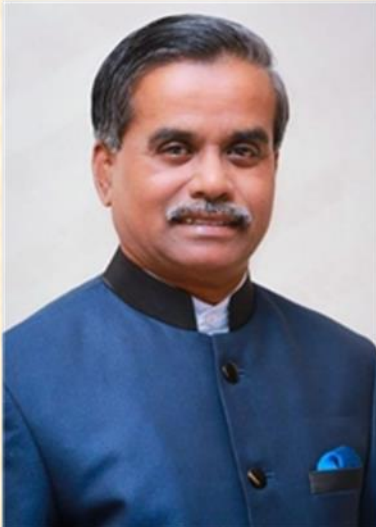
BEACONS THAT GUIDE



Prof. A. K. Mohanty
Secretary, DAE and Chairman,
Council of Management, HBNI



Prof. Anil Kakodkar
Chancellor, HBNI



Prof. U. Kamachi Mudali
Vice Chancellor, HBNI



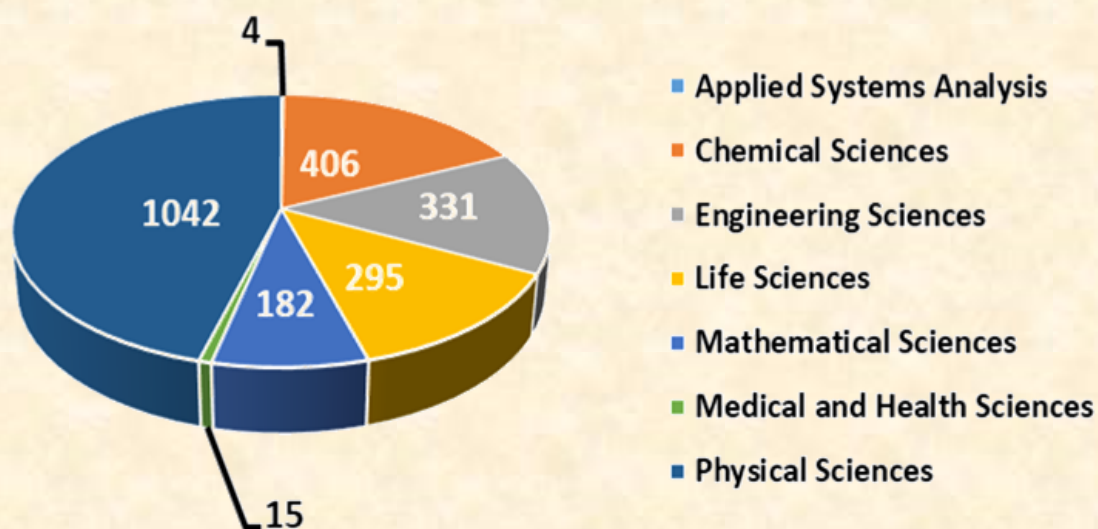
Prof. P. D. Naik
Dean, HBNI

HBNI PROGRESS SO FAR.....

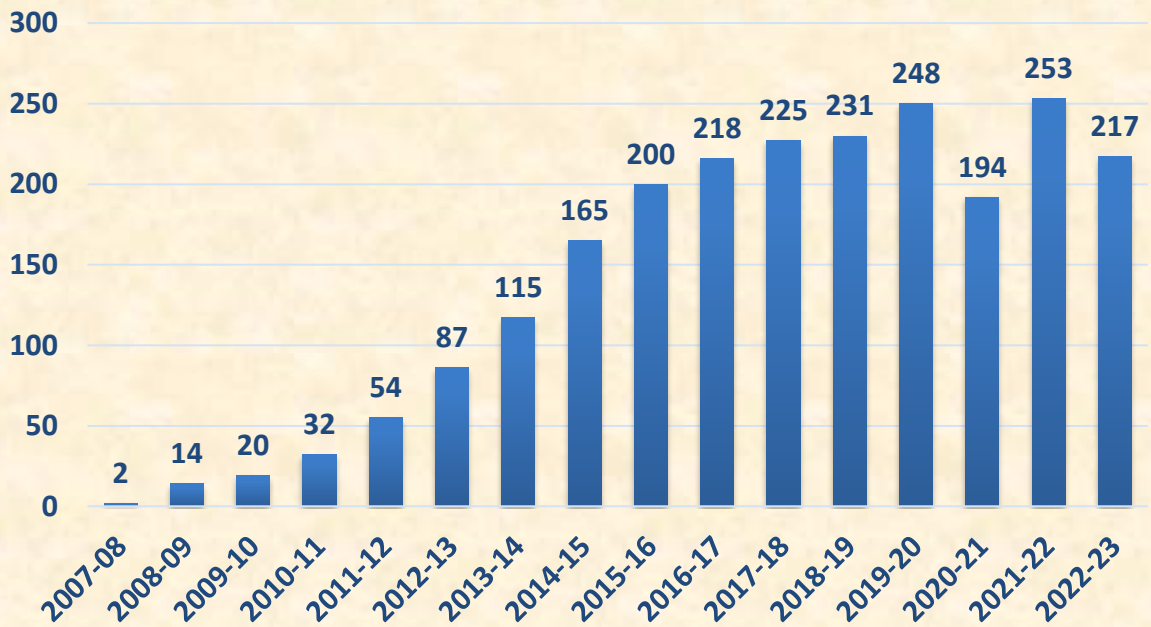
Since its inception in the year 2005 as a deemed to be university, HBNI has steadily grown in terms of its academic programmes, the number of students and faculty, infrastructure and last but not the least the academic vigour. The academic programmes of the HBNI are leading to human resource development not only in core areas of nuclear science and engineering but also in several other areas of societal importance such as medical and health sciences. Till March 2023, HBNI has awarded 2275 Ph.D., 1466 M. Tech., 637 M.D., 225 M.Ch. and 194 D.M. degrees. The number of publications in reputed journals by HBNI faculty and students has been registering a healthy increase year after year. Based on high-quality publications in Nature Group of Journals, the Nature Index 2023 placed HBNI in the **second position** among all institutions in India, and in the **first position** with regard to publications in physical sciences. HBNI obtained **15th rank** in the Research Institution Category, **17th rank** in the University category and **30th rank** among 1657 institutions in the overall category in National Institute Ranking Framework (NIRF) exercise conducted by Ministry of Education (MoE) in 2023. NIRF ranks universities on parameters: (i) Teaching Learning and Resources, (ii) Research productivity, (iii) Graduation Outcome, (iv) Outreach and inclusivity and (v) Perception.

HBNI at a Glance

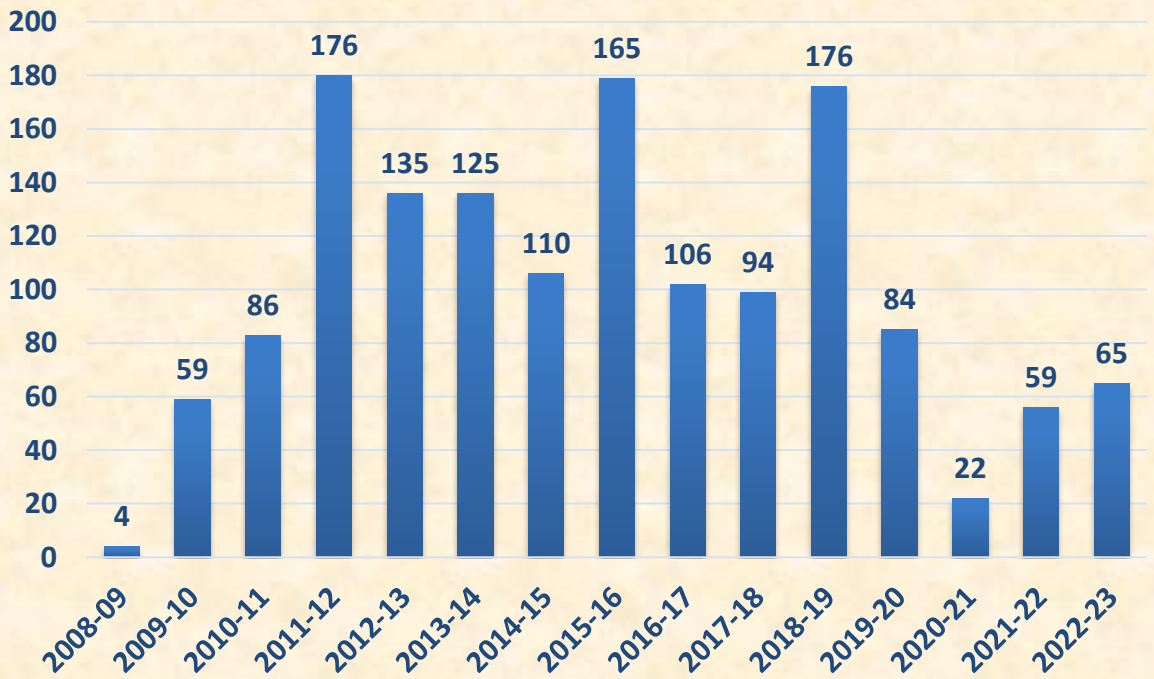
Discipline wise Distribution of Total (2275) Ph.D. Results Declared



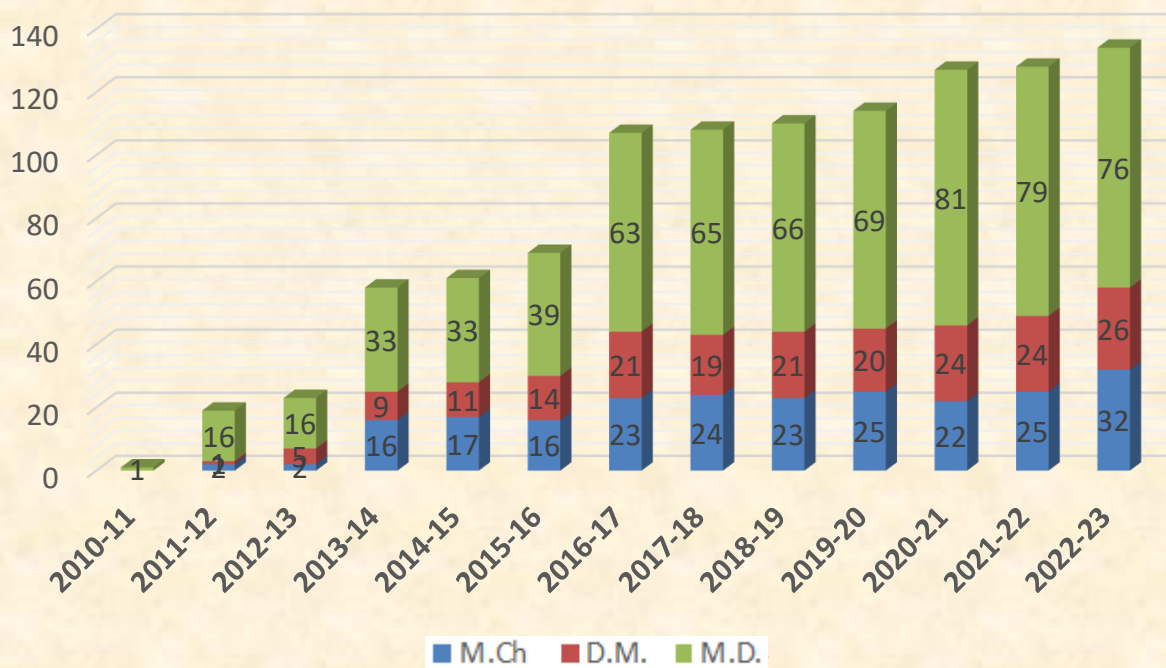
Year wise Ph.D. results declared



Year wise M.Tech results declared



Year Wise M.D./D.M./M.Ch Result Declared



Academic Collaborations

To obtain the benefits from the mutual expertise in various research areas, teaching and learning, to facilitate collaborative research for the faculty and to enrich the knowledge of students, HBNI has signed Memorandum of Understanding (MoU) with the following eminent academic institutions in the country and overseas.

1. Indian Institute of Science, Bengaluru
2. Indian Institute of Technology, Bombay
3. Indian Institute of Technology, Kharagpur
4. Indian Institute of Technology, Kanpur
5. Indian Institute of Technology, Madras
6. Indian Institute of Technology, Indore
7. Indian Institute of Technology, Roorkee
8. Institute of Chemical Technology, Mumbai
9. Chennai Mathematical Institute, Chennai
10. Jadavpur University, Kolkata

11. **Jawaharlal Nehru University, New Delhi**
12. **Panjab University, Chandigarh**
13. **Tata Institute of Fundamental Research, Mumbai**
14. **The Commissariat a l'energieatomique et aux energies alternatives, France**
15. **Ghent University, Belgium**

These MoUs enable HBNI students to attend courses at the above mentioned institutes and earn course credits. Research Collaborations are also possible between HBNI and institutes under MoU and HBNI students can avail research facilities of these institutes. Faculty of such institutes can also be co-guides of HBNI students.

Academic Processes

HBNI is implementing the academic programmes as per the prescribed Academic Calendar. The detailed information on the programmes is available with the Deans - Academic at the CIs/OCC. The calendar, the ordinances and guidelines, provide all necessary information to the students as well as the faculty members about the academic process and the timelines to be strictly adhered to. The students are advised to carefully study these documents and clarify any doubt with their guides or the Dean (Student Affairs) (DSA) in the respective CIs/OCC.

The details of the academic process for the HBNI academic programmes are given in the ordinances of HBNI. The students should refer to the HBNI website for latest version of these ordinances, and also other guidelines that may be updated from time to time. The format / template for various types of forms is also available in the website, and students are advised to use the latest forms available in the web site and not any other versions as the forms have undergone revision.

A website, <http://www.anuvidhya.in> was launched by HBNI in 2020. The students can apply for online enrolment at this website. The website also allows for online submission of fee and all the documents required for issue of provisional degree certificate (PDC) viz., soft copy of the thesis, alumni form and feedback form by the Ph.D., and M.Tech. students. The facility for online submission of documents for result declaration will soon be extended for other academic programmes as well.

Unique Research Facilities

The CIs of HBNI have a wide range of facilities ranging from tabletop set up to mega science facilities such as research reactors, accelerators, tokamaks, etc.

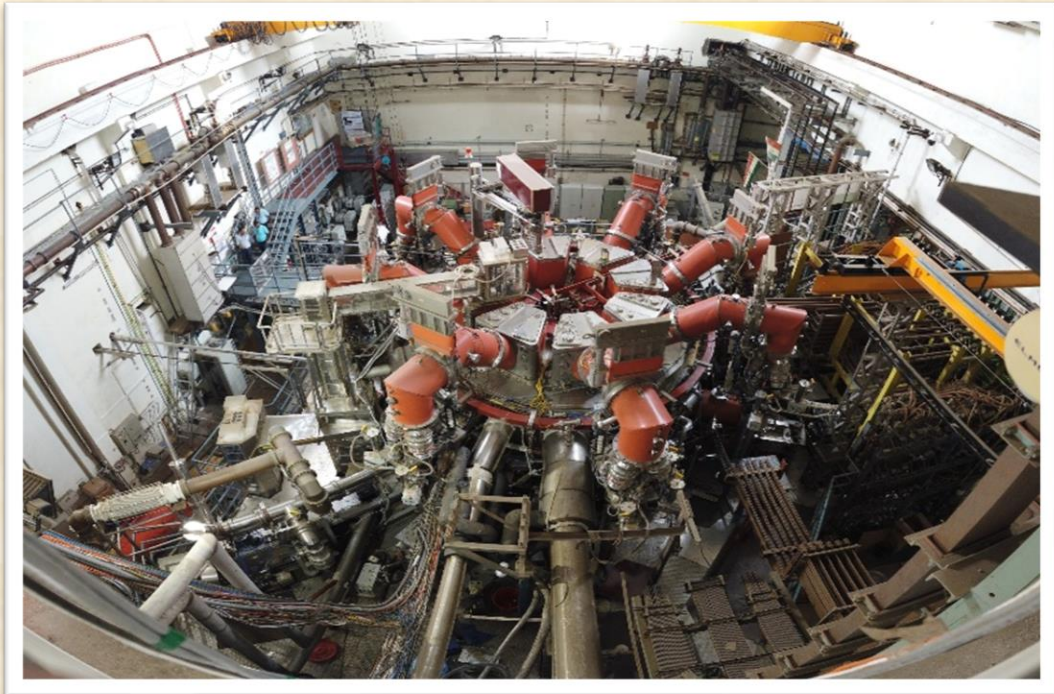
Computational resources available to faculty and students are quite extensive and faculty is well trained to build own instrumentation and facilities. Thus, doctoral students have unique opportunity to work on frontline areas with world class facilities.



APSARA-U, Research Reactor at BARC



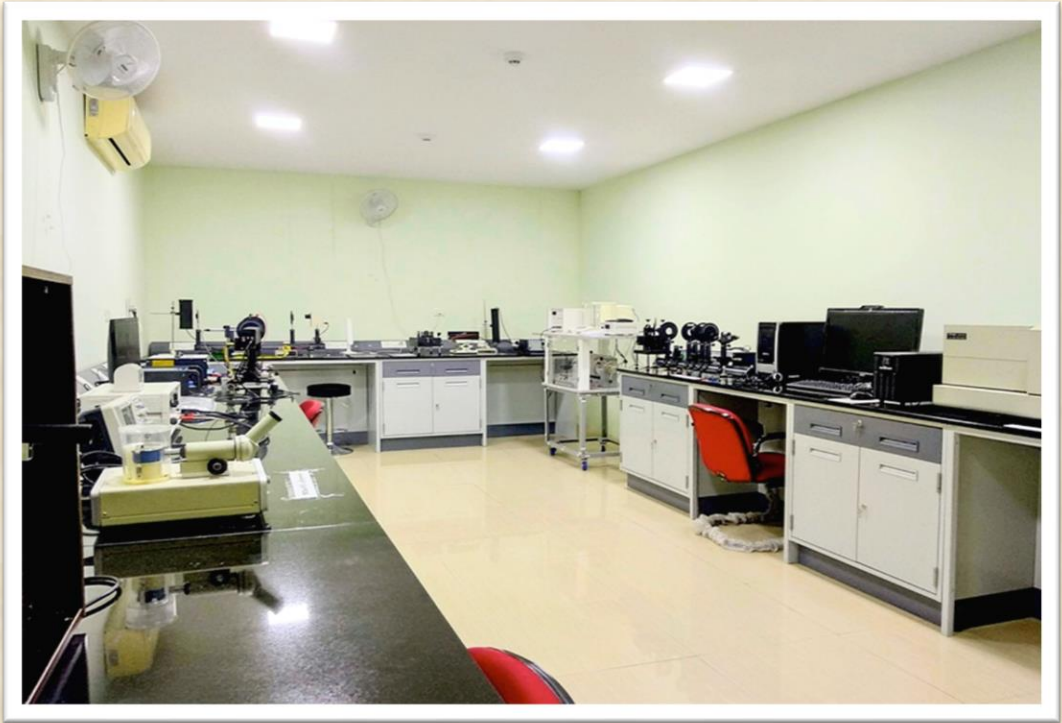
**Neutron Scattering Facilities inside the Dhruba
Reactor Hall at BARC**



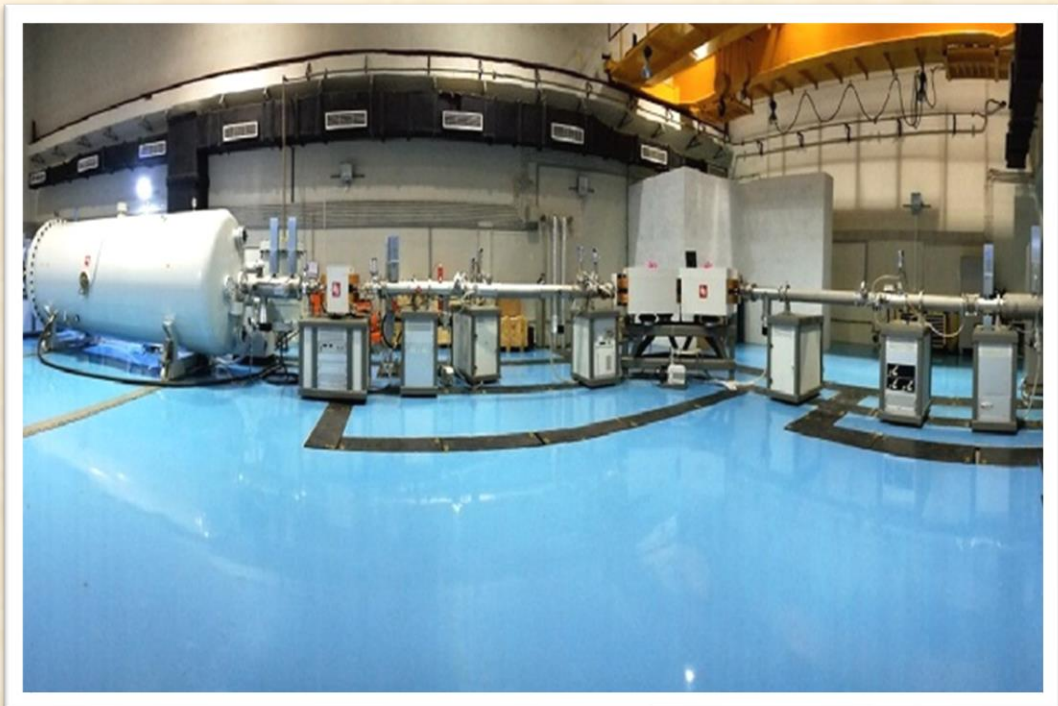
Steady State Superconducting Tokamak (SST-1) at IPR



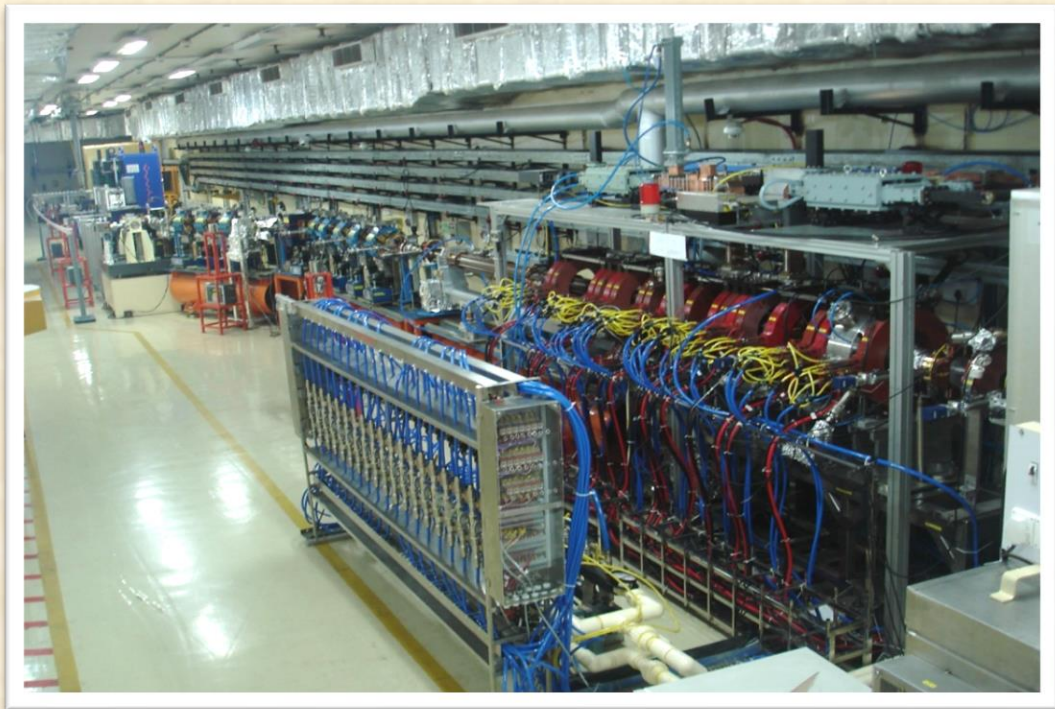
ANUPAM Atulya Peta FLOP Class Supercomputer at BARC



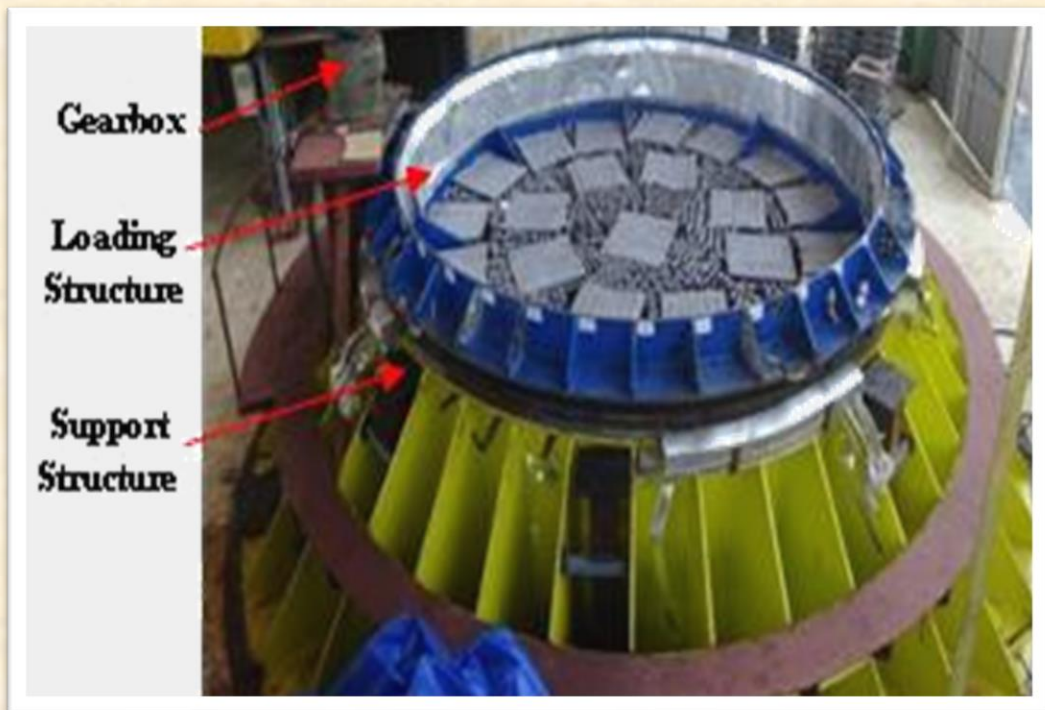
New Optics laboratory at HRI



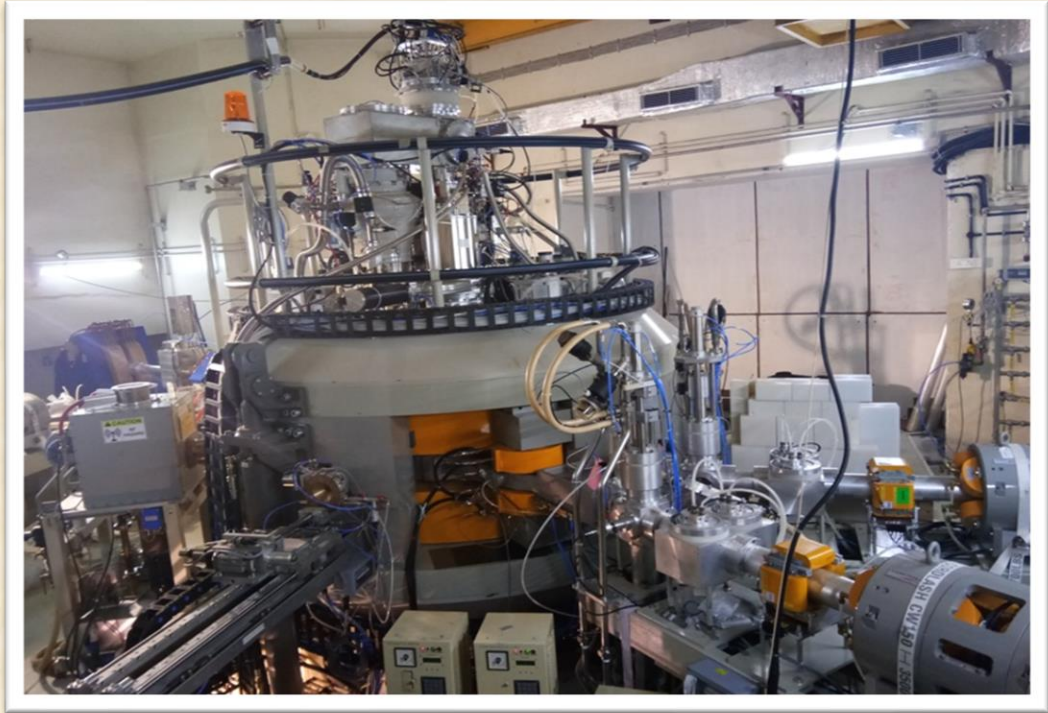
**Facility for Research in Experimental Nuclear Astrophysics, (FRENA) at
SINP**



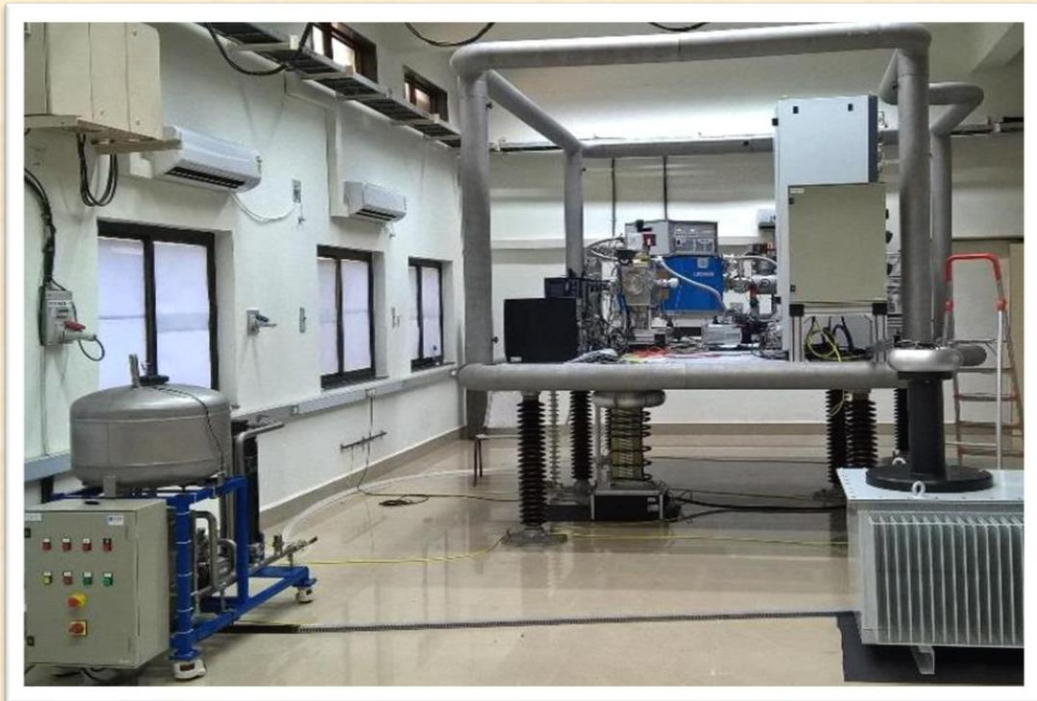
Infrared Free Electron Laser Developed at RRCAT



Facility for functional testing and qualification of large diameter bearing at IGCAR



Medical Cyclotron facility cyclone-30 at VECC



Electron Cyclotron Resonance (ECR) ion source-based low-to-medium energy ion-beam facility at IOP



Hot cell facility for studies on radioactive materials at BARC



Laboratory Animal Facility at TMC-ACTREC, Mumbai



High performance computation facility at HRI

HBNI-Industrial Linkage Centre (HILC)

HBNI has set up a “**HBNI-Industry Linkage Centre**” (HILC) in 2022 for the benefit of its students and faculty members with the following objectives:

- (i) to facilitate the skill development of HBNI Ph.D. students by way of internship in Industry
- (ii) to facilitate R&D collaboration between Industry and HBNI students/faculty with the aim of scaling up processes, commercializing/incubating new technologies, developing new processes / products of interest to DAE, etc.
- (iii) to facilitate the interaction between former scientific and technical experts from DAE and industry for taking up consultancy projects

Financial Aspects

Fellowship

The fellowships are provided by DAE to research fellows as well as other amenities and entitlements are covered by DAE notification from time to time. The fees payable by students are notified by HBNI and its CIs/OCC from time to time.

Contingency

The contingency Grant to be used for buying (i) books/journals (ii) stationery (iii) computer hardware and software, (iv) mailing expenses (v) travel, registration fee and other expenses connected with participation in seminars/conferences (vi) membership of professional bodies.

Other Benefits

Enrolment fee and thesis evaluation fee wherever applicable paid by the Ph.D. students shall not be the part of the contingency grant. The CIs/OCC of HBNI can frame policies for reimbursement of such fees as considered appropriate by them. Work related travel by the students will be reimbursed by the CIs/OCC.

The research fellows are eligible for house rent allowance if hostel accommodation is not available. They are eligible for medical facilities as per the rules of the institution in which they are working.

Financial Assistance for participation in international conference abroad

The Ph.D. students are encouraged to participate in good quality international conferences/symposia on a relevant topic, for presenting their research work. Limited travel assistance is provided by HBNI for this purpose, once during the tenure of Ph.D. To qualify for the travel assistance, the student should have passed the OGCE and also made significant progress in the research work. The students are required to follow Government orders and regulations regarding travel. The details of the scheme are available with Dean (Student Affairs) (DSA).

Fee Payment

HBNI does not charge any tuition fee for the Ph.D. programmes. The fee structure for various academic programmes is detailed in the brochure issued by the CI/OCC. The research student is liable to pay fees for various processes such as enrolment, thesis evaluation and academic extension (the first extension does not need any fee payment). The fee payment can be made online. The fee structure as well as procedure for online payment is available in the HBNI web site.

Guidelines for Students

Guidelines for Publications

HBNI is very keen that the publications of its students as well as faculty members are not only of high standards, but also conform to the best ethical practices. Guidelines for publications have been framed by HBNI and all Deans (Academic) have been sensitized about implementing the guidelines. In addition, the CIs/OCC may have additional guidelines for publications which also should be met by the students and faculty. The students are advised to discuss with their guide or Dean (Academic) or Dean (Student Affairs) about the guidelines and ensure that they are followed in the publication process.

Students in particular, should ensure that their affiliation to HBNI is reflected in the publications. Where a thesis is submitted to HBNI for award of a degree, it is required that the publications appearing in the thesis reflect the HBNI affiliation. Boards of Studies have been advised that the publications of students that do not reflect HBNI affiliation need not be considered for award of the degree.

Completion of programmes/discontinuation

On completion of the academic programme, or in case the student has to discontinue the programme for any valid reasons, the student should intimate the same to the Guide and to the DSA. The student should also meet all administrative requirements of the CI/OCC, such as handing over of documents, materials, apparatus, books drawn from library, accommodation, identity card, etc.

Other Guidelines

Discipline

1. The students are expected to dress and to conduct themselves in a proper manner.
2. HBNI has zero tolerance policy for ragging. If a student is found guilty of ragging, his/her enrolment could be cancelled, besides initiation of other actions as prescribed in Government rules. Students are also strictly warned not to indulge in any form of sexual harassment, which may attract disciplinary action.
3. The student is expected to adhere to the guidelines/instructions provided by the Guide and the Doctoral Committee in all academic matters. In administrative matters, he/she will be governed by the rules and procedures of the CI/OCC. The student is expected to strictly follow the code of conduct prescribed by the Institute and the CI/OCC. If a student commits a breach of the code of conduct, his/her enrolment could be cancelled, and he/she would also attract administrative actions as per the rules of the CI.
4. A grievance cell is functional at each CI/OCC, which the student is welcome to approach in case he has any kind of grievance. However, it is expected that before the matter is taken up with grievance cell, the student has exhausted all other options including discussion with Dean (Student Affairs).
5. In case a student is not satisfied with the redressal mechanism in the CIs/OCC, he/she may seek support from the Central Office of HBNI by forwarding a representation to the Convener, HBNI Student Grievance Redressal Committee or e-mail to sghbni@hbni.ac.in, through proper channel.
6. Sexual harassment includes such unwelcome sexually determined behaviour (whether directly or by implication) as: (i) Physical contact and advances, (ii) A demand or request for sexual favours, (iii) Sexually coloured remarks, (iv) Any other unwelcome physical, verbal or non-verbal conduct of a sexual nature. Behaviour such as this constitutes an action unbecoming of a student/staff member of the Institute and will attract appropriate disciplinary action. A Sexual Harassment Complaint Committee (SHCC) is functional in all the CIs/OCC, and Women's Cell at HBNI Central Office. Any aggrieved female student, regardless of the age, can lodge a complaint of sexual harassment in the work place with SHCC/Women's Cell, HBNI Central Office. The contact details of the members of Women's Cell are available on HBNI website.

7. The students and faculty members are expected to function with highest level of academic integrity. In their academic behavior, there should be open adoption of ethical practices. The term "ethical practice" will include avoiding/reporting/discouraging plagiarism, giving due credits to co-workers and not indulging in any kind of cheating including fudging of experimental data. The ethical practices with regard to publications are discussed in the guidelines that have been issued in this regard.

8. The students are required to attend lectures and other academic activities and meet the requirement of the minimum residence time prescribed for the programme. The applications for leave of absence have to be made to the Research Supervisor in advance and approval for the leave should be obtained before proceeding on leave. The eligibility with regard to the various kinds of leave is notified by the authority paying the fellowship/stipend. The participation in any scientific event in India or abroad will be treated as on duty. Unauthorised absence for long periods of time may result in termination of enrolment. For more details, please visit www.hbni.ac.in.

Alumni Cell

The Alumni Cell of HBNI was constituted in the year 2019 in order to create a robust mechanism to remain in touch with the alumni of HBNI to obtain feedback and suggestions from them based on their experience and involve them in various promotional activities including guiding students for their placements. The details about the alumni cell of HBNI as well as links to alumni of CIs/OCC are available on HBNI website. The students can approach Alumni cell of HBNI for help with their placement.

HBNI Placement Cell (HBNI-PC)

HBNI is setting up a HBNI Placement Cell (HBNI-PC) which will be the nodal point of contact for companies/industries seeking to establish a fruitful relationship with HBNI. It will be a facilitating body which will conduct training, provide technical support and organize placement activities for the graduating researchers from HBNI. Apart from providing the job and internship opportunities, HBNI-PC will also offer an array of services to support HBNI students including the guidance to develop students' employability, technical and academic skills, and will help them to shape their career through various workshops and industrial tours.

Key Officials of HBNI

CHANCELLOR

Prof. Anil Kakodkar kakodkar@barc.gov.in 022-25505210

VICE CHANCELLOR

Prof. U. Kamachi Mudali vicechancellor@hbni.ac.in 022-25597638

VICE CHANCELLOR's OFFICE

PA to Vice Chancellor vcoff@hbni.ac.in 022-25597621

DEAN

Prof. P. D. Naik deanhbni@hbni.ac.in 022-25595398

REGISTRAR

Prof. P. C. Selvin registrar@hbni.ac.in 022-25597625

ASSOCIATE DEANS

Prof. D. K. Maity asso_dean@hbni.ac.in 022-25597623

Prof. Naveen Kumar nkumar@hbni.ac.in 022-25597629

Prof. Dipanwita Dutta ddutta08@hbni.ac.in 022-25592041

Prof. Haridas Pal hpal59@hbni.ac.in 022-25597554

Prof. Sunil Ghosh sunilg@hbni.ac.in 022-25597624

Prof. B. K. Nayak bknayak@hbni.ac.in 022-25507624

ASSISTANT DEAN

Dr. (Smt.) Anshu Singhal asinghal@hbni.ac.in 022-25597616

DEPUTY REGISTRAR

Shri Suresh Nair dy.registrar@hbni.ac.in 022-25597637

ADMINISTRATIVE OFFICAR(III)

Smt. Bharati Suvarna ao3hbni@hbni.ac.in 022-25597611



HBNI Ranked 15 in research institutions category



HBNI ranked 17 in university category



HBNI ranked 30 in overall category

CORE VALUES OF HBNI

Student-Centric Approach

Keep in mind the good of the student in designing processes and programs

Ethical Conduct

Adhere to code of ethics in teaching, research and service

Resist and relegate dishonesty

Science for Society

Encourage application of advanced knowledge in sciences including medical and health sciences, to address needs of society



World Class Education and Research

Nurture human resources in sciences (including Engineering sciences) and Mathematics

Provide access to world class experimental facilities and research problems in frontier areas

Promote Excellence

Devise mechanisms to recognize, encourage and reward Excellence

Use merit as the only consideration in every process

Focus on National Mission

Use education and research as tools to meet the needs of the nation in various domains and particularly nuclear science and technology



HOMI BHABHA NATIONAL INSTITUTE

2nd Floor, Training School Complex,
Anushaktinagar, Mumbai 400 094
Ph: 022 25597554, 022 25597626
www.hbni.ac.in